

STATE OF COLORADO

John W. Hickenlooper, Governor
Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

June 20, 2014

Jim Sullivan
Director of Utilities
City of Arvada
8101 Ralston Road
Arvada, CO 80002-2439

Subject: Sanitary Survey of City of Arvada Community Water System
Public Water System Identification No CO0130001
Jefferson County

Dear Mr. Sullivan:

This letter serves to report the findings of the sanitary survey conducted by the Field Services Section of the Colorado Department of Public Health and Environment's Water Quality Control Division (the Department) at City of Arvada (the Supplier) on May 22 and 23, 2014. The assistance that was provided during the sanitary survey was very helpful and is greatly appreciated. Table 1 identifies the parties present during the sanitary survey.

Table 1: Parties Present

Name	Organization
Judy Schmidt	City of Arvada
Larry Hach	City of Arvada
John Brooks	City of Arvada
Brad Wyant	City of Arvada
Gary Williamson	City of Arvada
Steve Hamel	City of Arvada
Kevin Tohill	City of Arvada
Tara Kratzer	City of Arvada
Jorge Delgado	CDPHE-WQCD-FSS-Denver
Christine Lukasik	CDPHE-WQCD-FSS-Denver

This letter is the Supplier's notification of any significant deficiencies and/or alleged violations of the *Colorado Primary Drinking Water Regulations* (Regulation 11), 5 CCR 1002-11 identified during the sanitary survey. Table 2 summarizes the number of findings and the required written response and resolution dates.

Table 2: Sanitary Survey Findings

Severity Category	Number Identified	Written Response Due (within 45 days of letter date):	Resolution Due (within 120 days of letter, or Department-approved alternate date):
Significant Deficiencies	0	Not applicable	Not applicable
Other Violations	0	Not applicable	Not applicable
Observations-Recommendations	4	No response required	Not applicable

Significant Deficiencies:

According to Regulation 11, Section 11.3(66), a significant deficiency means:

any situation, practice, or condition in a public water system with respect to design, operation, maintenance, or administration, that the state determines may result in or have the potential to result in production of finished drinking water that poses an unacceptable risk to health and welfare of the public served by the water system.

The Supplier's written response to this letter must address all items listed in this category. All significant deficiencies must be corrected and will be followed up by the Department.

No significant deficiencies were identified.

Other Violations:

Other violations may be identified during a sanitary survey that are not significant deficiencies but must be corrected. The Supplier may be contacted by a compliance specialist from the Department's Compliance Assurance Section for additional follow-up on these violations. The Supplier must resolve these violations prior to the subsequent sanitary survey, which will be verified by the Department's inspector at that time.

No other violations were identified.

Observations/Recommendations:

While the Department does not directly follow up on the observations/recommendations, the Supplier is advised to address them. The following observations/recommendations were identified:

1. F991 – Finished Water Storage: Cook Hill Tank 500K (SDWIS ID: 003)

Other Storage Observations: Inspector identified storage observation.

During the sanitary survey, the Department evaluated the Supplier's storage tank operations and maintenance practices. The Department recommends that the Supplier develop a checklist that documents the visual checks performed at the storage tank. The list should include vent condition, overflow condition, access hatch condition, storage tank condition, storage tank security and other measures. The Department recommends that on a year to year basis the Supplier photograph the storage tank, the vent, the overflow and the access hatch to document the condition of the tank. Additionally, the Department recommends that the inspection reports regarding tank inspections by outside parties include photos of the finding within the report and that the Supplier track and establish tank inspection frequency dates.

2. and 3. T995 – Treatment: Ralston WTP and Arvada WTP (SDWIS ID: 001 & 002)

Other Treatment Observations: Inspector identified treatment observation.

- During the sanitary survey, the Department evaluated the log inactivation and removal values achieved for *Giardia lamblia* and viruses. The Department determined that the Supplier is capable of achieving adequate log inactivation and removal for *Giardia lamblia* and viruses by filtration and disinfection at both Ralston WTP and Arvada WTP (SDWIS ID: 001 & 002). The Department recommends that the Supplier continue to measure and record the water temperature, the pH and the free chlorine residual at the entry point after all disinfection has been achieved. The Department recommends that the Supplier evaluate the flow measurement methods for flow exiting the contact basin. These values are required to accurately calculate log inactivation values. The Department recommends that the Supplier develop continuous log inactivation calculation which would help the operators ensure that all water produced at the Supplier's facility has achieved 3 log *Giardia lamblia* and 4 log viral inactivation and removal.
- The Department recommends that the Supplier perform a baffling factor tracer study across both contact basins being used to achieve contact time at Ralston WTP and Arvada WTP (SDWIS ID: 001 & 002). The Department recommends that the Supplier evaluate the practicability of a study being performed. A baffling factor calculated based on a tracer study helps provide the most accurate log inactivation values for *Giardia lamblia* and virus removal and helps ensure that adequate disinfection is being achieved.

- The Department recommends that the Supplier further expand on its contact time calculation document and further explain how the Supplier calculates log inactivation values at the Ralston WTP and Arvada WTP (SDWIS ID: 001 & 002). The document should at a minimum include sampling locations and procedures (pH, temperature and chlorine residual), flow measuring procedures, volume determination calculations, baffling factor determination explanation, log inactivation calculations, frequency and records keeping procedures.

4. R997 – Monitoring & Recordkeeping and Data Verification:

Other Monitoring & Recordkeeping and Data Observations: Inspector identified Monitoring, Recordkeeping & Data observation.

During the sanitary survey, the Supplier's raw water, combined filter effluent (CFE), finished water total organic carbon (TOC) and entry point sampling locations were discussed at both the Ralston WTP and Arvada WTP (SDWIS ID: 001 & 002). It was agreed upon by both the Supplier and the Department that the Supplier will sample for the following parameters at the following locations;

- The compliance raw water samples will be collected prior to the addition of any treatment and before any recycled water is introduced;
- The CFE and finished water TOC will be collected from the Supplier's filter drain collection system clearwell before water is transferred to contact basins used for disinfection. Settled water should be collected prior to water being treated with an oxidant (i.e. chlorine) and should be filtered with a 0.45 micron filter for dissolved organic carbon and UV 254 analysis; and,
- The entry point sample, which includes the daily chlorine sampling requirements, will be collected after water has flowed through the contact basins used for disinfection and before the water enters the distribution system or at the first customer.

Please contact Lauren Worley of the Compliance Assurance Section with any questions that you may have with regards to sampling locations. Ms. Worley can be reached at 303-692-3547 or via email at lauren.worley@state.co.us

Field Verification/Sampling

While performing the sanitary survey, the inspector verified operator certification requirements and performed water quality sampling for chlorine and turbidity. Table 3 indicates the operator certification verification for City of Arvada. Table 4 indicates the results of the water quality sampling performed on-site.

Table 3: Operator Certification Verification

Category	Required Certification Level	Name of Operator in Responsible Charge	Certification Level Held and No.	Certification Expiration Date
Treatment	A	Bradley Wyant	"A" & 1804	September 28, 2014
Distribution	4	Cliff Deeds	"4" & 118	November 30, 2016

Table 4: Sampling Results

Parameter	Sample Location	Value	Units	Notes
Disinfectant Residual	Entry Point Ralston	2.23	mg/L	
Disinfectant Residual	Jimmy Johns	1.52	mg/L	
Turbidity	CFE Ralston	0.08	NTU	

Reminders

- Regulation 11, Section 11.4(1)(b) (Prior Approval Required) requires the Department's approval prior to commencement of construction of any improvements, treatment process modifications or the addition of new water sources.
- Most regulations, guidance documents and forms are available via the Internet on the Department's website. Please link to <http://wqcdcompliance.com> for further information.

Enclosed with this letter you will find a postage-paid Customer Satisfaction Survey Postcard. Please take a few moments to complete the survey and return it to the Department. Your efforts to provide feedback to improve the sanitary survey process are appreciated.

If you have any questions, please contact me by phone at 303-692-3511 or by email at jorge.a.delgado@state.co.us
Thank you for your time and cooperation.

Sincerely,



Jorge Delgado, P.E.
Senior Field Engineer
Field Services Section
Water Quality Control Division
Colorado Department of Public Health and Environment

Encl: Fluoride Worksheets Ralston and Arvada

cc: Jefferson County Public Health
Drinking Water File, PWSID No. CO0130001 (ES.14.INSP.00955)
Judy Schmidt, City of Arvada, Water Quality Administrator
Brad Wyant, City of Arvada, Treatment ORC
Gary Williamson, City of Arvada, Distribution System Operator
Lauren Worley, Compliance Specialist, Drinking Water Compliance and Enforcement North Unit, CDPHE-WQCD-DW CA Section
Christine Lukasik, Associate Field Engineer, CDPHE-WQCD-Field Services Section
Clayton Moores, Staff Field Engineer, CDPHE-WQCD-Field Services Section
Katya Mauritsen, DMD, Oral Health Unit Director, CDPHE-PSD-Health Equity and Access Branch
Corinne Allen-Ziser, RDH, Oral Health Program Coordinator, CDPHE-PSD-Health Equity and Access Branch

Oral Health Fluoridation Inspection Form
FY 2014

- [illegible]

Oral Health Fluoridation Inspection Form
FY 2014

- ## Fluoride System Inspection Checklist

Operator Bradley Wyant

Yes	Chlorine	No	Polyphosphates
Yes	Alum	No	Ferric
Yes	Caustic	No	Ammonia
No	Soda Ash	Yes	KMnO4
Yes	Lime		
No	Other: ACH and powder activated carbon		

Type:
Info:
